CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
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Project Number
22669

Project Title
Plant Reactions to Historic Martian Conditions

Abstract

Objectives/Goals

1 Problem Statement: Could plants survive on an ancient Mars, which is predicted to be wetter ant warmer and have a denser atmosphere? Which plants were fair the best under the most strenous conditions (carbon dioxide and UV light)in this historic environment? It is my goal that in this project to discover more about the possibility of bringing life to Mars if the ancient conditions reoccur.

2 Hypothesis: I believe that the plants will prosper in the carbon dioxide, due to their photosynthetic needs. I believe that plants will die under the UV light because of danger of their shorter rays to life.

Methods/Materials

3 Materials:

Plastic tubing Four Succulents Black light
Carbon dioxide Four Daisies plastic bags
Micro valves Four Tomato plants Table & Board
Connector and spray nozzles Small nuts (fit on spray nozzles) Syringe

4 Procedure:

A. Label plants, connect valves to bags, syringe and carbon dioxide tank

B. Vacuum air out of bags, place all plants in carbon dioxide bags and not in places (under UV light or in sunlight)

C. Record data daily on plants conditions, water according to schedule, and fill carbon dioxide bags as needed

Results

5 Results: The tomato generally faired the worse out of all my plants; they especially suffered in the carbon dioxide. The succulent faired the best, prospering in the carbon dioxide and showed somet adaptations to the UV light. Under the UV light a succulent that was originally green with purple edges and turned completely purple. The daisy gradually died in all areas however exhibited more endurance than the tomato plants. This indicats the pacific changes and reaction plants have to Ancient Mars.

Conclusions/Discussion

6 Conclusion: My conclusion is that succulents would survive and prosper on ancient Mars. Also that they would be the most adaptive to this new and strange habitat. This expands our knowledge on what plants are the best under strenous conditions and best to send to a biome on Mars or other plants. This also tells scientist that at one time plants could survive on Mars and if it is possible agian they could pave

Summary Statement

My porject is about learning through plants reactions to historic martian conditions if its possible that higher life forms could have survived and prospered on a foriegn plant.

Help Received

My father helped me set up the connections for carbon dioxide bags and proofread my conclusion.